

## NEEDLE-LESS INJECTOR OF MINIATURE TYPE

### ABSTRACT OF THE DISCLOSURE

Needle-less injectors for liquids are known in many different forms which are adapted to different conditions of use. The needle-less injector according to the invention is in the form of a hand-held unit. It includes a locking stressing mechanism, an energy-storing spring (36), a hollow plunger (37) displaceable in a cylinder (38) and a nozzle (39). At its one end, the hollow plunger is provided with a valve body (42). The supply container (44) for the liquid is arranged within the housing. When the locking stressing mechanism is stressed by rotation of the two housing portions (31, 32) relative to each other the hollow plunger (37) is drawn out of the cylinder (38); at the same time the amount of liquid required for an injection is conveyed out of the supply container (44) through the plunger into the pump chamber (43). After the locking stressing mechanism is triggered the amount of liquid is expelled from the pump chamber through the nozzle. The needle-less injector can be safely and easily handled, even by unskilled persons. It is used for the intracutaneous injection of a medicament-bearing liquid into biological tissue, for the injection of an active substance-bearing liquid into a plant, or for the injection of a liquid through a membrane into the space behind the membrane.